124C AMPLIFIER



GENERAL

The 124C amplifier is a push-pull, two-stage amplifier with self-contained power supply unit and plate supply filter. It is designed for use either as a terminating or bridging amplifier whenever a carbon transmitter source is required, such as in loudspeaker paging systems or test desk to main frame loudspeaker systems. One of these amplifiers forms a part of the 103C amplifier.

ELECTRICAL CHARACTERISTICS

Gain - - - - - - 58 db, high gain input. 50 db, bridging input.

Source Impedance- 0-1000 ohms, 50 ohms nominal, high gain input. 0-25,000 ohms, 600 ohms nominal, bridging input.

Internal Input Impedance - 150 ohms, high gain input. 27,000 ohms bridging input.

Internal Output Impedance - 3/4 of nominal load impedance.

Load Impedance - 1.75, 7.5, 16, 30, 150 or 600 ohms. Also 70-volt loudspeaker distribution line. See Output Connections Table on schematic.

Output Level - - +41 dbm (12 watts) with less than 5% total harmonic distortion from 50 to 5000 cycles, and +42 dbm (20 watts) with 5% total harmonic distortion at 400 cycles with 600-ohm load.

Output Noise - -37 dbm (unweighted).

Frequency Response - - - - High gain input: -25 db, 25 cycles. -10 db, 100 cycles. -4.5 db, 200 cycles. -1 db, 500 cycles. +1 db, 3000 cycles. +2 db, 15,000 cycles. Bridging input: +1 db, 25-5000 cycles. +3 db, 15,000 cycles.

Gain Control - - 45 db continuously variable on high gain input. Set potentiometer at "Maximum" when using bridging input.

Power Supply - - 105 to 125 volts, 50-60 cycles, 1.1 amperes, 105 watts when used with 12-watt output connection. 105 to 125 volts, 50-60 cycles, 1.25 amperes, 125 watts when used with 20-watt output.

EQUIPMENT CHARACTERISTICS

Dimension - - - - 19" long, 7" high, 7-3/8" deep, including controls.

Weight - - - - - Approximately 20 pounds.

Finish - - - - - Chassis: aluminum lacquer. Front and edges of mat: black enamel, dark aluminum gray, gray or blue-gray.

Mounting - - - - Relay rack, shelf or apparatus cabinet.

ELECTRON TUBES

(These tubes are not supplied with the amplifier and must be ordered separately.)

	W.E. Co.		Commercial
2 - - - - - - - -	348A	or	6J7 or 6J7G
2 - - - - - - - -	350B	or	6L6 or 6L6G
1 - - - - - - - -	274B	or	5T4 or 5U4G

REFERENCES

ESX-675954 - - - - - Assembly and Stock List.

ESX-676168 - - - - - Wiring Diagram.

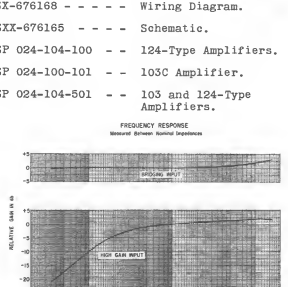
ESXX-676165 - - - - Schematic.

BSP 024-104-100 - - 124-Type Amplifiers.

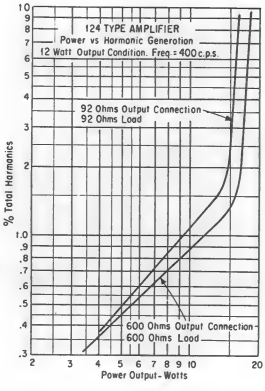
BSP 024-100-101 - - 103C Amplifier.

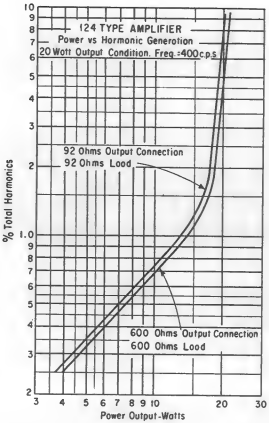
BSP 024-104-501 - - 103 and 124-Type Amplifiers.

FREQUENCY RESPONSE
Measured Between Nominal Impedances

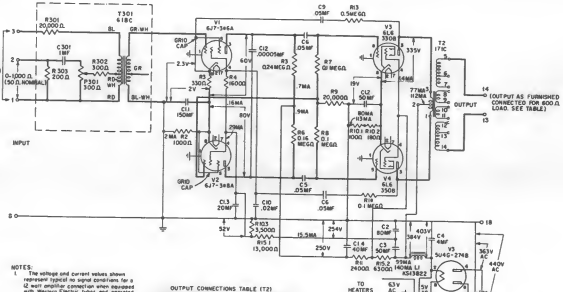


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NOTES:

1. The voltage and current values shown represent typical no signal conditions for a 12 watt amplifier connection when equipped with Western Electric tubes and operated from a 117 volt, 60 cycle source connected to L1, & L2 for the 20 watt connection multiply the values shown by a factor of 1.10

2 For 20 Watt operation connect the red leads from T3 to terminals 4 & 6 of V3 or place of the orange leads. Tape unused leads. Snap out R10 & R10 1 (100 Ω Section) Use Western Electric 350 B Vacuum tubes in output stage

OUTPUT CONNECTIONS TABLE (T2)

12 WATTS OUTPUT		20 WATTS OUTPUT			
Nominal Load Impedance	Working Range of Load Impedance	Nominal Load Impedance	Working Range of Load Impedance	Strap Terminals	Output Connection
6000Ω	3000Ω to 12000Ω	9000Ω	2000Ω to 8000Ω	7-8-9-10,11-12	5 & 14
1500Ω	1201 to 3000Ω	1000Ω	500 to 2000Ω	7-8-9-10,11-12,5-6	5 & 16
3001	2001 to 7501	2501	1001 to 5001	7-8-9-10,11-12	5 & 15
1501	1001 to 2001	1001	501 to 1501	7-8-9-10,11-12	5 & 13
751Ω	501 to 1001	501Ω	201 to 751	7-9-10,11-12,6 & 8,13	5 & 13
175Ω	10 to 501	181	10.50 to 201	7-9-10,11-12,5-6,13	5 & 13

70V OUTPUT	12 & 20 WATTS OUTPUT
Strap Terminal 8-13	Output Connections 3 & 16